

RESTRICTION OF TYPE LOCALITIES OF SOME FRESHWATER MOLLUSCA DESCRIBED FROM THAILAND

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The type locality of most of the new freshwater bivalves and gastropods that Isaac Lea described from Thailand was recorded simply as "Siam." However, he did provide more detailed locality information for four of his new species, and he always cited the name of the person who sent him the original material (mainly the American physicians S.R. House and T.R. Ingalls). My own collections from northeastern and western Thailand contained many of Lea's species, and they strongly suggest that Lea's material came from the same few places and were sent to him by the same persons. The purpose of this paper is to restrict the type localities of some of Lea's species to a particular drainage in some instances and to a specific site in other cases. Specimens from those particular localities can then be regarded as topotypes.

As was the custom in his time, Lea described many new species of "unionid" bivalves as members of the genus *Unio* Philipsson if their shells possessed all hinge teeth, as members of *Monocondylaea* Orbigny if their shells had reduced pseudocardinal teeth and lacked lateral teeth, and as members of *Anodonta* Lamarck if the hinge lacked all teeth. Many new generic names were later established by various authors (mainly 1900-1936), and the majority of Lea's species were then placed in other generic groups. The same history is also true for many of the gastropods that he described. In the following alphabetized lists the generic designation most recently used for each species is given in brackets. The species marked by an asterisk are those that I found alive or as empty shells at the specific locality.

Type locality 1: Lam Taklong (= Takrong River *sensu* Lea), about 1 km north of Nakhon Ratchasima (= Korat), Nakhon Ratchasima Province.

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Bivalvia (Pelecypoda) Sent to Lea by:

<i>Unio nucleus</i> LEA, 1856a [<i>Scabies</i>] (see Note 1)	S.R. House
* <i>Unio scobinatus</i> LEA, 1856a [<i>Scabies</i>]	T.R. Ingalls, S.R. House

Gastropoda

* <i>Ampullaria gracilis</i> LEA, 1856c [<i>Pila</i>]	S.R. House
* <i>Bithinia siamensis</i> LEA, 1856c [<i>Bithynia</i>]	S.R. House
* <i>Melania housei</i> LEA, 1856d [<i>Adamietta</i>]	S.R. House
* <i>Paludina ingallsiana</i> LEA, 1856c [<i>Idiopoma</i>]	T.R. Ingalls
* <i>Paludina umbilicata</i> LEA, 1856c [<i>Idiopoma</i>]	W.A. Haines

Type locality 2: Lam Nam Mun near Amphoe Phimai, Nakhon Ratchasima Province.

Bivalvia

* <i>Unio cambodiensis</i> LEA, 1856b [<i>Physunio</i>] (see Note 2)	S.R. House
* <i>Unio eximius</i> LEA, 1856a [<i>Physunio</i>]	S.R. House
* <i>Unio ingallsianus</i> LEA, 1852 [<i>Ensidens</i>]	T.R. Ingalls
<i>Unio inornatus</i> LEA, 1856a [<i>Physunio</i>]	S.R. House
* <i>Unio phaselus</i> LEA, 1856a [<i>Scabies</i>]	S.R. House
(= <i>Unio crispata</i> GOULD, 1843)	
* <i>Unio sagittarius</i> LEA, 1856a [<i>Ensidens</i>]	S.R. House
(= <i>Unio ingallstanus</i> LEA, 1852)	

Type locality 3: Mae Nam Khwae Yai at Ban Nong Bua, about 12 km northwest of Kanchanaburi, Kanchanaburi Province.

Bivalvia

<i>Mycetopus emarginatus</i> LEA, 1860 (see Note 3)	S.R. House
[<i>Mycetopoda fide</i> BRANDT (1974);	
<i>Solenia fide</i> CONRAD (1868) and Heard (1977)]	
* <i>Unio hainesianus</i> LEA, 1856a [<i>Chamberlainia</i>]	S.R. House
* <i>Unio housei</i> LEA, 1856a [<i>Hyriopsis</i>]	S.R. House
(= <i>Unio myersianus</i> LEA, 1856a)	
* <i>Unio myersianus</i> LEA, 1856a [<i>Hyriopsis</i>]	S.R. House
<i>Unio tumidulus</i> LEA, 1856a [<i>Uniandra</i>] (see Note 3)	S.R. House
(= <i>Unio contradens</i> LEA, 1839)	

Type drainage 1: Mae Nam Mae Khlong system.

Bivalvia

* <i>Unio grayidus</i> LEA, 1856a [<i>Physunio</i>]	S.R. House
(= <i>Unio superbus</i> LEA, 1846)	

Unio substriatus LEA, 1856a [*Indonaia*] S.R. House

Type drainage 2: Mae Nam Chao Phya system *fide* BRANDT (1974).

Gastropoda

Paludina hainesiana LEA, 1856c [*Mekongia*] S.R. House

(= *Paludina swainsoniana* LEA, 1856c)

Paludina swainsoniana LEA, 1856 [*Mekongia*] T.R. Ingalls

Type drainage 3: Mae Nam Mekong *fide* BRANDT (1974).

Bivalvia

Unio humilis LEA, 1856a [*Indonaia*] S.R. House

Unio pilatus LEA, 1866 [*Indonaia*] (see Note 4) T.R. Ingalls

The drainage and specific locality of Lea's type material of the following species remain unknown. The type locality of all but *Pilsbryoconcha exilis* ("Habitat unknown") is simply "Siam," but that species might also have been originally described from Thai specimens.

Bivalvia

Anodonta exilis LEA, 1839 [*Pilsbryoconcha*] Mr. Warren

Monocondylaea compressa LEA, 1863 [*Pilsbryoconcha*] C.M. Wheatley

(= *Anodonta exilis exilis* LEA, 1839;

non *Spatha compressa* VON MARTENS, 1860

= *Pilsbryoconcha exilis compressa*)

Unio asperulus LEA, 1866 [*Uniandra*] T.R. Ingalls

(= *Unio contradens* LEA, 1839)

Unio rusticus LEA, 1856a [*Uniandra*] S.R. House

(= *Unio contradens* LEA, 1839)

Unio siamensis LEA, 1866 [*Trapezoideus*] C.M. Wheatley

(= *Unio exolescens* GOULD, 1843)

Gastropoda

Ampullaria turbinus LEA, 1856c [*Pila*] S.R. House

(= *Helix ampullacea* LINNAEUS, 1758)

Note 1. I did not find *Scabies nucleus* in Lam Takhlong 1 km north of Nakhon Ratchasima, but collected it 10 km west of the city and at several sites downstream. This species occurs only in the Mun drainage (BRANDT, 1974).

Note 2. Although in later publications LEA (1856c, 1856d) cited the type locality of *Bithynia siamensis* and *Idiopoma umbilicata* as "Takrong River, Siam," and that of *Adamietta housei* as "Korat, Takrong River, Siam," he earlier (1856b) recorded the type locality of *Physunio cambodiensis* as "Takrong River at Korat, Cambodia." That latter species therefore received its name from a partial error in the original information on the type locality.

Note 3. Shells of *Solenaia emarginata* and *Uniandra contradens* were found with some of *Chamberlainia hainesiana* and *Hyriopsis myersiana* in a roadside ditch about 2.5 km north of Ban Nong Bua (HEARD, 1977). They were apparently left there after the animals had been eaten by villagers. *Solenaia emarginata* is an extremely rare species that BRANDT (1974) considered to belong to *Mycetopoda*, a South American genus of Mycetopodidae. However, all Thai freshwater mussels belong to the Amblemidae and Unionidae.

Note 4. Ingalls possibly never visited the drainage basin of the Mae Nam Mekong (BRANDT, 1974). Another person (S.R. House?) may have collected the original material of *Indonaia pilatus* and have given it to Ingalls, who in turn sent it to Lea.

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